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## Appendix SUR IV      Calculated Variables

TIMS contains several surveillance variables that are not entered by the user but are instead derived from other user-entered data. The value of each calculated variable is assigned based on the contents of one or more other TIMS variables. The calculated variables are described in text format (Overview) as well as with calculation and usage information. A typical pattern for assigning a value to a calculated variable might be:

*Overview*    The record is assigned a ***Calculated Variable Value A***  
(calculatedvariable = 'A') calculated variable value if **Dependent  
Variable One** is B and **Dependent Variable Two** is C.

The record is assigned a ***Calculated Variable Value A***  
(calculatedvariable = 'A') calculated variable value if:

- **Dependent Variable One** is B (dependentvariable1 = 'B')
- AND -
- **Dependent Variable Two** is C (dependentvariable2 = 'C')

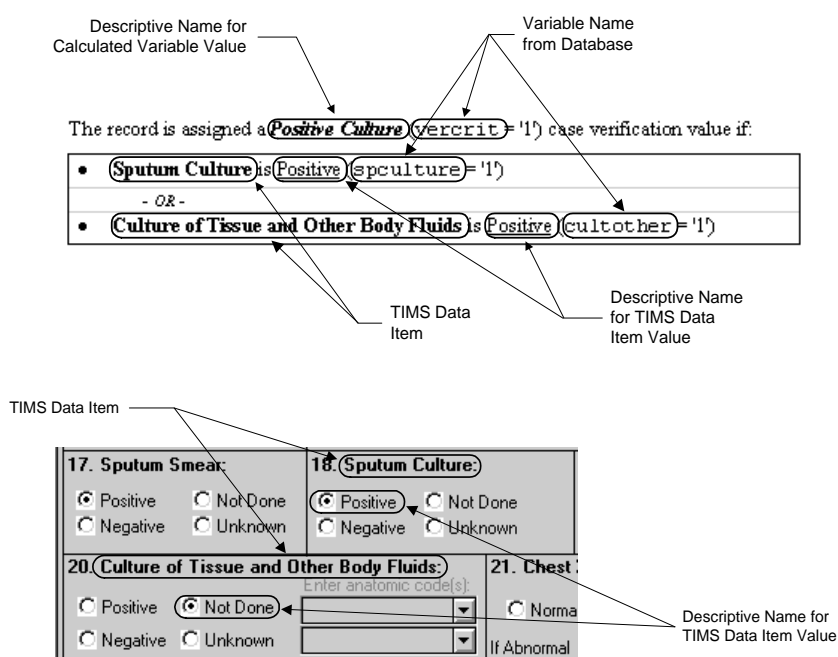
The calculated variables described in this appendix are:

- Case Verification
- Age at Month-Year Reported
- Age Group
- Site of Disease
- Race and Ethnicity
- Initial Drug Regimen
- Occupation

## Typographical Conventions

In most cases, calculated variables are described in two ways. First, a brief "plain English" Overview section provides a relatively simple explanation of how the variable is calculated. The Overview is followed by a more technically detailed calculation section that provides field names and values for all the components involved in the calculation.

- Descriptive Name for Calculated Variable Value is listed in ***Bold Italic*** text.
- Variable Name is listed in `Courier` text.
- TIMS Data Item (such as an RVCT question) is listed in **Bold** text.
- Descriptive Name for TIMS Data Item Value is listed in Underlined text.
- Missing data items (items that have not been selected in any way; items that are blank) are listed as *null*.



## Case Verification Criteria

### (TIMS Variable Name "vercrit")

The calculation of case verification is hierarchical. A record that satisfies the criteria for more than one Case Verification value will be assigned the value that appears first in the hierarchy. For example, a record that meets the criteria for both **Positive Culture** (vercrit = '1') and **Clinical Case Definition** (vercrit = '3') will be assigned a value of **Positive Culture** (vercrit = '1').

**Not a Verified Case** (vercrit = '0') appears twice in the hierarchy because there are two sets of criteria that will result in a Case Verification value of **Not a Verified Case** (vercrit = '0'). They are:

1. **Reason Therapy Stopped** is Not TB (stopreas = '5')
2. **Suspect Case** (vercrit = '5') is changed by the user to **Not a Verified Case** (vercrit = '0')

In addition, validations performed on variables used to calculate Case Verification will affect the Case Verification calculation itself and may limit the user's ability to overwrite the calculated Case Verification value.

For example, if a record has either a **Positive Sputum Culture** (spculture = '1') or a **Positive Culture of Tissue and Other Body Fluids** (cultother = '1'), then **Reason Therapy Stopped** cannot be Not TB (stopreas ≠ '5') because, by definition, a positive culture verifies the presence of *M. tuberculosis* complex. As a result, a record with a **Positive Culture** (vercrit = '1') Case Verification cannot be changed to **Not a Verified Case** (vercrit = '0').

**Suspect Case** (vercrit = '5') is the default Case Verification value assigned to all records created in the Surveillance module.

## 0 - Not a Verified Case

*Overview* The record is assigned a **Not a Verified Case** (vercrit = '0') case verification value if **Reason Therapy Stopped** is Not TB.

The record is assigned a **Not a Verified Case** (vercrit = '0') case verification value if:

- **Reason Therapy Stopped** is Not TB (stopreas = '5')

## 1 - Positive Culture

*Overview* The record is assigned a **Positive Culture** (vercrit = '1') case verification value if either **Sputum Culture** or **Culture of Tissue and Other Body Fluids** is Positive.

The record is assigned a **Positive Culture** (vercrit = '1') case verification value if:

- **Sputum Culture** is Positive (spculture = '1')
- OR -
- **Culture of Tissue and Other Body Fluids** is Positive (cultother = '1')

## 2 - Positive Smear/Tissue

*Overview* The record is assigned a **Positive Smear/Tissue** (vercrit = '2') case verification value if:

- **Sputum Smear** or **Microscopic Exam of Tissue and Other Body Fluids** is Positive

-AND-

- **Sputum Culture** and **Culture of Tissue and Other Body Fluids** are both either Not Done or Unknown

The record is assigned a **Positive Smear/Tissue** (vercrit = '2') case verification value if one of the following is true:

- **Sputum Smear** is Positive (spsmear = '1')
- OR -
- **Microscopic Exam of Tissue and Other Body Fluids** is Positive (microexam = '1')

- AND -

Both of the following are true:

- **Sputum Culture** is either Not Done (spculture = '3') or Unknown (spculture = '9')
- AND -
- **Culture of Tissue and Other Body Fluids** is either Not Done (cultother = '3') or Unknown (cultother = '9')

## 3 - Clinical Case Definition

### Case Definition A (Pulmonary TB)\*

*Overview* The record is assigned a **Clinical Case Definition** (vercrit = '3') case verification value if all the following are true:

- **Major Site of Disease** or **Additional Site of Disease** is either Pulmonary, Pleural, or Lymphatic Intrathoracic
- **Sputum Culture** and **Culture of Tissue and Other Body Fluids** are either Negative, Not Done, or Unknown
- **Chest X-Ray** is Abnormal, **Abnormal Condition** is either Cavitary or Noncavitary Consistent with TB, and **Abnormal Stability** is either Worsening or Improving
- **Tuberculin (Mantoux) Skin Test at Diagnosis** is Positive
- **Initial Drug Regimen** has at least two drugs marked Yes

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\* Use of Clinical Case Definition criteria A and B (i.e., Pulmonary TB, Extrapulmonary TB) does not imply that the patient is classified as having this particular Site of Disease (see the Site of Disease section on page SUR IV-IV-11).

### 3 - Clinical Case Definition (continued)

#### Case Definition A (Pulmonary TB)

The record is assigned a **Clinical Case Definition** (vercrit = '3') case verification value if one of the following is true:

- **Major Site of Disease** is either Pulmonary (majorsite = '00'), Pleural (majorsite = '10'), or Lymphatic Intrathoracic (majorsite = '22')  
- OR -
- **Additional Site of Disease** is either Pulmonary (addlsite = '00'), Pleural (addlsite = '10'), or Lymphatic Intrathoracic (addlsite = '22')

- AND -

All of the following are true:

- **Sputum Culture** is either Negative (spculture = '2'), Not Done (spculture = '3'), or Unknown (spculture = '9')  
- AND -
- **Culture of Tissue and Other Body Fluids** is Negative (cultother = '2'), Not Done (cultother = '3'), or Unknown (cultother = '9')  
- AND -
- **Chest X-Ray** is Abnormal (xray = '2')  
- AND -
- **Abnormal Condition** is either Cavitary (abnormality = '1') or Noncavitary Consistent with TB (abnormality = '2')  
- AND -
- **Abnormal Stability** is either Worsening (xraystatus = '2') or Improving (xraystatus = '3')  
- AND -
- **Tuberculin (Mantoux) Skin Test at Diagnosis** is Positive (tbtest = '1')  
- AND -
- **Initial Drug Regimen** has at least two drugs marked Yes (two or more of the following must be true):
  - **Isoniazid** is marked Yes (initinh = '1')
  - **Rifampin** is marked Yes (initrif = '1')
  - **Pyrazinamide** is marked Yes (initpza = '1')
  - **Ethambutol** is marked Yes (initemb = '1')
  - **Streptomycin** is marked Yes (initism = '1')
  - **Ethionamide** is marked Yes (initeth = '1')
  - **Kanamycin** is marked Yes (initkan = '1')
  - **Cycloserine** is marked Yes (initcyc = '1')
  - **Capreomycin** is marked Yes (initcap = '1')
  - **Para-Amino Salicylic Acid** is marked Yes (initpas = '1')
  - **Amikacin** is marked Yes (initam = '1')
  - **Rifabutine** is marked Yes (initrib = '1')
  - **Ciprofloxacin** is marked Yes (initcip = '1')
  - **Ofloxacin** is marked Yes (initofl = '1')
  - **Other** is marked Yes (initoth = '1')

### 3 - Clinical Case Definition (continued)

#### Case Definition B (Extrapulmonary TB)\*

*Overview* The record is assigned a **Clinical Case Definition** (vercrit = '3') case verification value if:

- Case Definition A is not met
- **Major Site of Disease** or **Additional Site of Disease** is either Lymphatic Cervical, Lymphatic Other, Lymphatic Unknown, Bone and/or Joint, Genitourinary, Miliary, Meningeal, Peritoneal, or Other
- **Sputum Culture** and **Culture of Tissue and Other Body Fluids** are either Negative, Not Done, or Unknown
- **Tuberculin (Mantoux) Skin Test at Diagnosis** is Positive
- **Initial Drug Regimen** has at least two drugs marked Yes

The record is assigned a **Clinical Case Definition** (vercrit = '3') case verification value if the following is true:

- Clinical Case Definition A is not met

- AND -

One of the following is true:

- **Major Site of Disease** (majorsite) is any of the following:

<u>21 - Lymphatic: Cervical</u> (majorsite = '21')	<u>23 - Lymphatic: Other</u> (majorsite = '23')
<u>29 - Lymphatic: Unknown</u> (majorsite = '29')	<u>30 - Bone and/or Joint</u> (majorsite = '30')
<u>40 - Genitourinary</u> (majorsite = '40')	<u>50 - Miliary</u> (majorsite = '50')
<u>60 - Meningeal</u> (majorsite = '60')	<u>70 - Peritoneal</u> (majorsite = '70')
<u>80 - Other</u> (majorsite = '80')	
- OR -
- **Additional Site of Disease** (addlsite) is any of the following:

<u>21 - Lymphatic: Cervical</u> (addlsite = '21')	<u>23 - Lymphatic: Other</u> (addlsite = '23')
<u>29 - Lymphatic: Unknown</u> (addlsite = '29')	<u>30 - Bone and/or Joint</u> (addlsite = '30')
<u>40 - Genitourinary</u> (addlsite = '40')	<u>50 - Miliary</u> (addlsite = '50')
<u>60 - Meningeal</u> (addlsite = '60')	<u>70 - Peritoneal</u> (addlsite = '70')
<u>80 - Other</u> (addlsite = '80')	

- AND -

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\* Use of Clinical Case Definition criteria A and B (i.e., Pulmonary TB, Extrapulmonary TB) does not imply that the patient is classified as having this particular Site of Disease (see the Site of Disease section on page SUR IV-IV-11).

### 3 - Clinical Case Definition (continued)

#### Case Definition B (Extrapulmonary TB)

All of the following are true:

- **Sputum Culture** is either Negative (spculture = '2'), Not Done (spculture = '3'), or Unknown (spculture = '9')
  - AND -
- **Culture of Tissue and Other Body Fluids** is Negative (cultother = '2'), Not Done (cultother = '3'), or Unknown (cultother = '9')
  - AND -
- **TB Skin Test at Diagnosis** is Positive (tbtest = '1')
  - AND -
- **Initial Drug Regimen** has at least two drugs are marked Yes (two or more of the following must be true):
  - **Isoniazid** is marked Yes (initinh = '1')
  - **Rifampin** is marked Yes (initrif = '1')
  - **Pyrazinamide** is marked Yes (initpza = '1')
  - **Ethambutol** is marked Yes (initemb = '1')
  - **Streptomycin** is marked Yes (initism = '1')
  - **Ethionamide** is marked Yes (initeth = '1')
  - **Kanamycin** is marked Yes (initkan = '1')
  - **Cycloserine** is marked Yes (initcyc = '1')
  - **Capreomycin** is marked Yes (initcap = '1')
  - **Para-Amino Salicylic Acid** is marked Yes (initpas = '1')
  - **Amikacin** is marked Yes (initam = '1')
  - **Rifabutine** is marked Yes (initrib = '1')
  - **Ciprofloxacin** is marked Yes (initcip = '1')
  - **Ofloxacin** is marked Yes (initofl = '1')
  - **Other** is marked Yes (initoth = '1')

If criteria to satisfy any of the previous case verifications are not met, the user has the option to overwrite the assigned case verification default value *Suspect* (vercrit = '5'), by selecting either *Verified by Provider Diagnosis* (vercrit = '4') or *Not a Verified Case* (vercrit = '0').

## 5 - Suspect

All new records are considered *Suspect* (vercrit = '5') until they meet the criteria for another Case Verification value or are overwritten by the user as either *Verified by Provider Diagnosis* (vercrit = '4') or *Not a Verified Case* (vercrit = '0').

## 4 - Verified by Provider Diagnosis

The user elects to overwrite case verification default value *Suspect* (vercrit = '5') with *Verified by Provider Diagnosis* (vercrit = '4').

## 0 - Not a Verified Case

The user elects to overwrite the *Suspect* (vercrit = '5') case verification default with *Not a Verified Case* (vercrit = '0').



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## Age at Month-Year Reported

(TIMS Variable Name "ageatrept")

Age at Month-Year Reported (ageatrept) is calculated by subtracting the client's **Date of Birth** (birthdate) from **Month-Year Reported** (reportdate). For purposes of this calculation, "day" in **Month-Year Reported** is defaulted to the last day of the month.

The *Age at Month-Year Reported* is the number of whole years completed in the client's life. For example, both 29 years three months and 29 years 11 months would be calculated as 29 years (ageatrept = '29').

## Age Groups

(TIMS Variable Name "agegroup")

TIMS has two age range-related calculated variables: 5-Year Age Group and 10-Year Age Group.

### 5-Year Age Group

The 5-Year Age Group variable (agegroup) is assigned a value based on the contents of the **Age at Month-Year Reported** (ageatrept) variable. The individual values represent 5-year age groups.

ageatrept Age Range	agegroup Assigned Value	ageatrept Age Range	agegroup Assigned Value
0 - 4	<b>1</b>	45 - 49	<b>10</b>
5 - 9	<b>2</b>	50 - 54	<b>11</b>
10 - 14	<b>3</b>	55 - 59	<b>12</b>
15 - 19	<b>4</b>	60 - 64	<b>13</b>
20 - 24	<b>5</b>	65 - 69	<b>14</b>
25 - 29	<b>6</b>	70 - 74	<b>15</b>
30 - 34	<b>7</b>	75 - 79	<b>16</b>
35 - 39	<b>8</b>	80 - 84	<b>17</b>
40 - 44	<b>9</b>	85+	<b>18</b>

### 10-Year Age Group

**Note:** This is not a TIMS variable stored in the databases. However, it is a part of the TIMS Surveillance Demographics report.

10-Year Age Group (range)
<b>0 - 9</b>
<b>10 - 19</b>
<b>20 - 29</b>
<b>30 - 39</b>
<b>40 - 49</b>
<b>50 - 59</b>
<b>60 - 69</b>
<b>70 - 79</b>
<b>80+</b>

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## Site of Disease

(TIMS Variable Name "siteofdisease")

Site of Disease combines values from **Major Site of Disease** (majorsite) and **Additional Site of Disease** (addlsite) as follows:

### 1 - Pulmonary

*Overview* The record is assigned a **Pulmonary** Site of Disease value (siteofdisease = '1') if **Major Site of Disease** is Pulmonary and **Additional Site of Disease** is Missing.

The record is assigned a **Pulmonary** Site of Disease value (siteofdisease = '1') if the following condition is met:

- |  |
|--|
| <ul style="list-style-type: none"><li>• <b>Major Site of Disease</b> is <u>Pulmonary</u> (majorsite = '00')</li><li>- AND -</li><li>• <b>Additional Site of Disease</b> is Missing (addlsite = null)</li></ul> |
|--|

### 8 - Site Not Stated

*Overview* The record is assigned a **Site not Stated** Site of Disease value (siteofdisease = '8') if **Major Site of Disease** is Site not Stated.

The record is assigned a **Site not Stated** Site of Disease value (siteofdisease = '8') if:

- |   |
|---|
| <ul style="list-style-type: none"><li>• <b>Major Site of Disease</b> is <u>Site not Stated</u> (majorsite = '90')</li></ul> |
|---|

### 9 - Missing

*Overview* The record is assigned a **Missing** Site of Disease value (siteofdisease = '9') if both **Major Site of Disease** and **Additional Site of Disease** are Missing.

The record is assigned a **Missing** Site of Disease value (siteofdisease = '9') if:

- |   |
|---|
| <ul style="list-style-type: none"><li>• <b>Major Site of Disease</b> is Missing (majorsite = null)</li><li>- AND -</li><li>• <b>Additional Site of Disease</b> is Missing (addlsite = null)</li></ul> |
|---|

## 2 - Extrapulmonary

*Overview* The record is assigned an **Extrapulmonary** Site of Disease value (siteofdisease = '2') if:

- **Major Site of Disease** is any valid site of disease code *except* Pulmonary, Miliary, or Site not Stated and **Additional Site of Disease** is Missing
- OR-
- **Major Site of Disease** is any Site of Disease code that is not Pulmonary or Miliary and **Additional Site of Disease** is any Site of Disease code that is not Pulmonary.\*

The record is assigned an **Extrapulmonary** Site of Disease value (siteofdisease = '2') if any of the following conditions are met:

### Condition 1

- **Major Site of Disease** (majorsite) is any one of the following:

<u>10 - Pleural</u> (majorsite = '10')	<u>21 - Lymphatic: Cervical</u> (majorsite = '21')
<u>22 - Lymphatic: Intrathoracic</u> (majorsite = '22')	<u>23 - Lymphatic: Other</u> (majorsite = '23')
<u>29 - Lymphatic: Unknown</u> (majorsite = '29')	<u>30 - Bone and/or Joint</u> (majorsite = '30')
<u>40 - Genitourinary</u> (majorsite = '40')	<u>60 - Meningeal</u> (majorsite = '60')
<u>70 - Peritoneal</u> (majorsite = '70')	<u>80 - Other</u> (majorsite = '80')
- AND -
- **Additional Site of Disease** (addlsite) is Missing:

### Condition 2

- **Major Site of Disease** (majorsite) is any of the following:

<u>10 - Pleural</u> (majorsite = '10')	<u>21 - Lymphatic: Cervical</u> (majorsite = '21')
<u>22 - Lymphatic: Intrathoracic</u> (majorsite = '22')	<u>23 - Lymphatic: Other</u> (majorsite = '23')
<u>29 - Lymphatic: Unknown</u> (majorsite = '29')	<u>30 - Bone and/or Joint</u> (majorsite = '30')
<u>40 - Genitourinary</u> (majorsite = '40')	<u>60 - Meningeal</u> (majorsite = '60')
<u>70 - Peritoneal</u> (majorsite = '70')	<u>80 - Other</u> (majorsite = '80')
- AND -
- **Additional Site of Disease** (addlsite) is one or more of the following:

<u>10 - Pleural</u> (addlsite = '10')	<u>21 - Lymphatic: Cervical</u> (addlsite = '21')
<u>22 - Lymphatic: Intrathoracic</u> (addlsite = '22')	<u>23 - Lymphatic: Other</u> (addlsite = '23')
<u>29 - Lymphatic: Unknown</u> (addlsite = '29')	<u>30 - Bone and/or Joint</u> (addlsite = '30')
<u>40 - Genitourinary</u> (addlsite = '40')	<u>50 - Miliary</u> (addlsite = '50')
<u>60 - Meningeal</u> (addlsite = '60')	<u>70 - Peritoneal</u> (addlsite = '70')
<u>80 - Other</u> (addlsite = '80')	

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\* If the patient has Miliary tuberculosis, Miliary should be entered as the Major Site of Disease and Additional Site of Disease should be Missing (blank). See Appendix SUR I - RVCT Form Completion Instructions for details.

### 3 - Both

*Overview* The record is assigned a **Both** Site of Disease value (siteofdisease = '3') if:

- **Major Site of Disease** is Miliary
- OR-
- **Major Site of Disease** is Pulmonary and **Additional Site of Disease** is any valid site of disease code
- OR-
- **Major Site of Disease** is any valid site of disease code *except* Pulmonary, Miliary, or Site not Stated and **Additional Site of Disease** is Pulmonary.

The record is assigned a **Both** Site of Disease value (siteofdisease = '3') if any of the following conditions are met:

#### Condition 1

- **Major Site of Disease** is Miliary (majorsite = '50')

#### Condition 2

- **Major Site of Disease** is Pulmonary (majorsite = '00')
- AND -
- **Additional Site of Disease** (addlsite) is any one of the following:
 

<u>10 - Pleural</u> (addlsite = '10')	<u>21 - Lymphatic: Cervical</u> (addlsite = '21')
<u>22 - Lymphatic: Intrathoracic</u> (addlsite = '22')	<u>23 - Lymphatic: Other</u> (addlsite = '23')
<u>29 - Lymphatic: Unknown</u> (addlsite = '29')	<u>30 - Bone and/or Joint</u> (addlsite = '30')
<u>40 - Genitourinary</u> (addlsite = '40')	<u>50 - Miliary</u> (addlsite = '50')
<u>60 - Meningeal</u> (addlsite = '60')	<u>70 - Peritoneal</u> (addlsite = '70')
<u>80 - Other</u> (addlsite = '80')	

#### Condition 3

- **Major Site of Disease** (majorsite) is any one of the following:
 

<u>10 - Pleural</u> (majorsite = '10')	<u>21 - Lymphatic: Cervical</u> (majorsite = '21')
<u>22 - Lymphatic: Intrathoracic</u> (majorsite = '22')	<u>23 - Lymphatic: Other</u> (majorsite = '23')
<u>29 - Lymphatic: Unknown</u> (majorsite = '29')	<u>30 - Bone and/or Joint</u> (majorsite = '30')
<u>40 - Genitourinary</u> (majorsite = '40')	<u>60 - Meningeal</u> (majorsite = '60')
<u>70 - Peritoneal</u> (majorsite = '70')	<u>80 - Other</u> (majorsite = '80')
- AND -
- **Additional Site of Disease** is Pulmonary (addlsite = '00')

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## Race and Ethnicity

(TIMS Variable Name "raceethnic")

Race and Ethnicity combines values from **Race** (*race*) and **Ethnic Origin** (*ethnic*) as follows:

### 1 - White, Non-Hispanic

*Overview* The record is assigned a **White, Non-Hispanic** Race and Ethnicity value (*raceethnic* = '1') if **Race** is White and **Ethnic Origin** is Non-Hispanic.

The record is assigned a **White, Non-Hispanic** Race and Ethnicity value (*raceethnic* = '1') if the following condition is met:

- **Race** is White (*race* = '1')
- AND -
- **Ethnic Origin** is Non-Hispanic (*ethnic* = '2')

### 2 - Black, Non-Hispanic

*Overview* The record is assigned a **Black, Non-Hispanic** Race and Ethnicity value (*raceethnic* = '2') if **Race** is Black and **Ethnic Origin** is Non-Hispanic.

The record is assigned a **Black, Non-Hispanic** Race and Ethnicity value (*raceethnic* = '2') if the following condition is met:

- **Race** is Black (*race* = '2')
- AND -
- **Ethnic Origin** is Non-Hispanic (*ethnic* = '2')

### 3 - All races, Hispanic

*Overview* The record is assigned an ***All Races, Hispanic*** Race and Ethnicity value (`raceethnic = '3'`) if **Race** is White, Black, Unknown, or Missing and **Ethnic Origin** is Hispanic.

The record is assigned an ***All Races, Hispanic*** Race and Ethnicity value (`raceethnic = '3'`) if any of the following conditions are completely met:

#### Condition 1

- |   |
|---|
| <ul style="list-style-type: none"><li>• <b>Race</b> is <u>White</u> (<code>race = '1'</code>)</li><li>- AND -</li><li>• <b>Ethnic Origin</b> is <u>Hispanic</u> (<code>ethnic = '1'</code>)</li></ul> |
|---|

#### Condition 2

- |   |
|---|
| <ul style="list-style-type: none"><li>• <b>Race</b> is <u>Black</u> (<code>race = '2'</code>)</li><li>- AND -</li><li>• <b>Ethnic Origin</b> is <u>Hispanic</u> (<code>ethnic = '1'</code>)</li></ul> |
|---|

#### Condition 3

- |  |
|--|
| <ul style="list-style-type: none"><li>• <b>Race</b> is <u>Unknown</u> (<code>race = '9'</code>)</li><li>- OR -</li><li>• <b>Race</b> is Missing (<code>race = null</code>)</li></ul> |
| - AND -  |
| <ul style="list-style-type: none"><li>• <b>Ethnic Origin</b> is <u>Hispanic</u> (<code>ethnic = '1'</code>)</li></ul>  |

#### 4 - American Indian or Alaskan Native

*Overview* The record is assigned an *American Indian or Alaskan Native* Race and Ethnicity value (`raceethnic = '4'`) if:

- **Race** is American Indian or Alaskan Native  
-AND-
- **Ethnic Origin** is Hispanic, Non-Hispanic, Unknown, or Missing.

The record is assigned an *American Indian or Alaskan Native* Race and Ethnicity value (`raceethnic = '4'`) if any of the following conditions are completely met:

##### Condition 1

- |   |
|---|
| <ul style="list-style-type: none"><li>• <b>Race</b> is <u>American Indian or Alaskan Native</u> (<code>race = '3'</code>)<br/>- AND -</li><li>• <b>Ethnic Origin</b> is <u>Hispanic</u> (<code>ethnic = '1'</code>)</li></ul> |
|---|

##### Condition 2

- |   |
|---|
| <ul style="list-style-type: none"><li>• <b>Race</b> is <u>American Indian or Alaskan Native</u> (<code>race = '3'</code>)<br/>- AND -</li><li>• <b>Ethnic Origin</b> is <u>Non-Hispanic</u> (<code>ethnic = '2'</code>)</li></ul> |
|---|

##### Condition 3

- |   |   |
|---|---|
| <ul style="list-style-type: none"><li>• <b>Race</b> is <u>American Indian or Alaskan Native</u> (<code>race = '3'</code>)<br/>- AND -</li></ul>   |   |
| <table border="1"><tr><td><ul style="list-style-type: none"><li>• <b>Ethnic Origin</b> is <u>Unknown</u> (<code>ethnic = '9'</code>)<br/>- OR -</li><li>• <b>Ethnic Origin</b> is <u>Missing</u> (<code>ethnic = null</code>)</li></ul></td></tr></table> | <ul style="list-style-type: none"><li>• <b>Ethnic Origin</b> is <u>Unknown</u> (<code>ethnic = '9'</code>)<br/>- OR -</li><li>• <b>Ethnic Origin</b> is <u>Missing</u> (<code>ethnic = null</code>)</li></ul> |
| <ul style="list-style-type: none"><li>• <b>Ethnic Origin</b> is <u>Unknown</u> (<code>ethnic = '9'</code>)<br/>- OR -</li><li>• <b>Ethnic Origin</b> is <u>Missing</u> (<code>ethnic = null</code>)</li></ul>   |   |



## 5 - Asian or Pacific Islander

*Overview* The record is assigned an ***Asian or Pacific Islander*** Race and Ethnicity value (`raceethnic = '5'`) if:

- **Race** is Asian or Pacific Islander
- AND-
- **Ethnic Origin** is Hispanic, Non-Hispanic, Unknown, or Missing

The record is assigned an ***Asian or Pacific Islander*** Race and Ethnicity value (`raceethnic = '5'`) if any of the following conditions are completely met:

### Condition 1

- |   |
|---|
| <ul style="list-style-type: none"><li>• <b>Race</b> is <u>Asian or Pacific Islander</u> (<code>race = '4'</code>)</li><li>- AND -</li><li>• <b>Ethnic Origin</b> is <u>Hispanic</u> (<code>ethnic = '1'</code>)</li></ul> |
|---|

### Condition 2

- |   |
|---|
| <ul style="list-style-type: none"><li>• <b>Race</b> is <u>Asian or Pacific Islander</u> (<code>race = '4'</code>)</li><li>- AND -</li><li>• <b>Ethnic Origin</b> is <u>Non-Hispanic</u> (<code>ethnic = '2'</code>)</li></ul> |
|---|

### Condition 3

- |  |
|--|
| <ul style="list-style-type: none"><li>• <b>Race</b> is <u>Asian or Pacific Islander</u> (<code>race = '4'</code>)</li><li>- AND -</li><li>• <b>Ethnic Origin</b> is <u>Unknown</u> (<code>ethnic = '9'</code>)</li><li>- OR -</li><li>• <b>Ethnic Origin</b> is Missing (<code>ethnic = null</code>)</li></ul> |
|--|

## 9 - Unknown

*Overview* The record is assigned an **Unknown** Race and Ethnicity value (raceethnic = '9') if:

- **Race** is White, Black, or Missing and the **Ethnic Origin** is Unknown or Missing
- OR-
- **Race** is Unknown and **Ethnic Origin** is Non-Hispanic, Unknown, or Missing

The record is assigned an **Unknown** Race and Ethnicity value (raceethnic = '9') if any of the following conditions are completely met:

### Condition 1

- **Race** is White (race = '1')

- AND -

- **Ethnic Origin** is Unknown (ethnic = '9')

- OR -

- **Ethnic Origin** is Missing (ethnic = null)

### Condition 2

- **Race** is Black (race = '2')

- AND -

- **Ethnic Origin** is Unknown (ethnic = '9')

- OR -

- **Ethnic Origin** is Missing (ethnic = null)

### Condition 3

- **Race** is Unknown (race = '9')

- OR -

- **Race** is Missing (race = null)

- AND -

- **Ethnic Origin** is Non-Hispanic (ethnic = '2')

### Condition 4

- **Race** is Unknown (race = '9')

- OR -

- **Race** is Missing (race = null)

- AND -

- **Ethnic Origin** is Unknown (ethnic = '9')

- OR -

- **Ethnic Origin** is Missing (ethnic = null)

## Initial Drug Regimen (TIMS Variable Name "initdrc")

Initial Drug Regimen (*initdrc*) is calculated using the responses to individual drugs listed in **Initial Drug Regimen**. The codes are assigned as follows:

### 0 - No Drugs

*Overview* The record is assigned a **No Drugs** Initial Drug Regimen value (*initdrc* = '0') if no drugs are marked Yes and at least one drug is marked No.

The record is assigned a **No Drugs** Initial Drug Regimen value (*initdrc* = '0') if the following condition is met:

- All of the following statements are true:
  - **Isoniazid** is not marked Yes (*initinh* ≠ '1')
  - **Rifampin** is not marked Yes (*initrif* ≠ '1')
  - **Pyrazinamide** is not marked Yes (*initpza* ≠ '1')
  - **Ethambutol** is not marked Yes (*itemb* ≠ '1')
  - **Streptomycin** is not marked Yes (*initsm* ≠ '1')
  - **Ethionamide** is not marked Yes (*initeth* ≠ '1')
  - **Kanamycin** is not marked Yes (*initkan* ≠ '1')
  - **Cycloserine** is not marked Yes (*initcyc* ≠ '1')
  - **Capreomycin** is not marked Yes (*initcap* ≠ '1')
  - **Para-Amino Salicylic Acid** is not marked Yes (*initpas* ≠ '1')
  - **Amikacin** is not marked Yes (*initam* ≠ '1')
  - **Rifabutine** is not marked Yes (*initrib* ≠ '1')
  - **Ciprofloxacin** is not marked Yes (*initcip* ≠ '1')
  - **Ofloxacin** is not marked Yes (*initofl* ≠ '1')
  - **Other** is not marked Yes (*initoth* ≠ '1')

- AND -

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**0 - No Drugs (continued)**

- At least one of the following statements is true:
  - **Isoniazid** is marked No (initinh = '0')
  - **Rifampin** is marked No (initrif = '0')
  - **Pyrazinamide** is marked No (initpza = '0')
  - **Ethambutol** is marked No (initemb = '0')
  - **Streptomycin** is marked No (initism = '0')
  - **Ethionamide** is marked No (initeth = '0')
  - **Kanamycin** is marked No (initkan = '0')
  - **Cycloserine** is marked No (initcyc = '0')
  - **Capreomycin** is marked No (initcap = '0')
  - **Para-Amino Salicylic Acid** is marked No (initpas = '0')
  - **Amikacin** is marked No (initam = '0')
  - **Rifabutine** is marked No (initrib = '0')
  - **Ciprofloxacin** is marked No (initcip = '0')
  - **Ofloxacin** is marked No (initofl = '0')
  - **Other** is marked No (initoth = '0')

**1 - One Drug**

*Overview* The record is assigned a **One Drug** Initial Drug Regimen value (initdrc = '1') if one and only one drug is marked Yes.

The record is assigned a **One Drug** Initial Drug Regimen value (initdrc = '1') if the following condition is met:

- One and only one of the following statements is true:
  - **Isoniazid** is marked Yes (initinh = '1')
  - **Rifampin** is marked Yes (initrif = '1')
  - **Pyrazinamide** is marked Yes (initpza = '1')
  - **Ethambutol** is marked Yes (initemb = '1')
  - **Streptomycin** is marked Yes (initism = '1')
  - **Ethionamide** is marked Yes (initeth = '1')
  - **Kanamycin** is marked Yes (initkan = '1')
  - **Cycloserine** is marked Yes (initcyc = '1')
  - **Capreomycin** is marked Yes (initcap = '1')
  - **Para-Amino Salicylic Acid** is marked Yes (initpas = '1')
  - **Amikacin** is marked Yes (initam = '1')
  - **Rifabutine** is marked Yes (initrib = '1')
  - **Ciprofloxacin** is marked Yes (initcip = '1')
  - **Ofloxacin** is marked Yes (initofl = '1')
  - **Other** is marked Yes (initoth = '1')

## 2 - INH, RIF, PZA and EMB or SM

*Overview* The record is assigned a **INH, RIF, PZA and EMB or SM** Initial Drug Regimen value (`initdrc = '2'`) if either:

- **Isoniazid, Rifampin, Pyrazinamide, and Ethambutol** are all marked Yes and no other drugs are marked Yes
- OR-
- **Isoniazid, Rifampin, Pyrazinamide, and Streptomycin** are all marked Yes and no other drugs are marked Yes

The record is assigned a **INH, RIF, PZA and EMB or SM** Initial Drug Regimen value (`initdrc = '2'`) if one of the following conditions are met:

### Condition 1

- **Isoniazid** is marked Yes (`initinh = '1'`)
- **Rifampin** is marked Yes (`initrif = '1'`)
- **Pyrazinamide** is marked Yes (`initpza = '1'`)
- **Ethambutol** is marked Yes (`initemb = '1'`)

- AND -

- All of the following statements are true:
  - **Streptomycin** is not marked Yes (`initism ≠ '1'`)
  - **Ethionamide** is not marked Yes (`initeth ≠ '1'`)
  - **Kanamycin** is not marked Yes (`initkan ≠ '1'`)
  - **Cycloserine** is not marked Yes (`initcyc ≠ '1'`)
  - **Capreomycin** is not marked Yes (`initcap ≠ '1'`)
  - **Para-Amino Salicylic Acid** is not marked Yes (`initpas ≠ '1'`)
  - **Amikacin** is not marked Yes (`initam ≠ '1'`)
  - **Rifabutine** is not marked Yes (`initrib ≠ '1'`)
  - **Ciprofloxacin** is not marked Yes (`initcip ≠ '1'`)
  - **Ofloxacin** is not marked Yes (`initofl ≠ '1'`)
  - **Other** is not marked Yes (`initoth ≠ '1'`)

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## 2 - INH, RIF, PZA and EMB or SM (continued)

### Condition 2

- **Isoniazid** is marked Yes (initinh = '1')
- **Rifampin** is marked Yes (initrif = '1')
- **Pyrazinamide** is marked Yes (initpza = '1')
- **Streptomycin** is marked Yes (initism = '1')

- AND -

- All of the following statements are true:
  - **Ethambutol** is not marked Yes (initemb ≠ '1')
  - **Ethionamide** is not marked Yes (initeth ≠ '1')
  - **Kanamycin** is not marked Yes (initkan ≠ '1')
  - **Cycloserine** is not marked Yes (initcyc ≠ '1')
  - **Capreomycin** is not marked Yes (initcap ≠ '1')
  - **Para-Amino Salicylic Acid** is not marked Yes (initpas ≠ '1')
  - **Amikacin** is not marked Yes (initam ≠ '1')
  - **Rifabutine** is not marked Yes (initrib ≠ '1')
  - **Ciprofloxacin** is not marked Yes (initcip ≠ '1')
  - **Ofloxacin** is not marked Yes (initofl ≠ '1')
  - **Other** is not marked Yes (initoth ≠ '1')

### 3 - INH, RIF and PZA

*Overview* The record is assigned an **INH, RIF and PZA** Initial Drug Regimen value (initdrc = '3') if **Isoniazid**, **Rifampin**, and **Pyrazinamide** are all marked Yes, and no other drugs are marked Yes.

The record is assigned a **INH, RIF and PZA** Initial Drug Regimen value (initdrc = '3') if the following condition is met:

- **Isoniazid** is marked Yes (initinh = '1')
- **Rifampin** is marked Yes (initrif = '1')
- **Pyrazinamide** is marked Yes (initpza = '1')

- AND -

- All of the following statements are true:
  - **Ethambutol** is not marked Yes (initemb ≠ '1')
  - **Streptomycin** is not marked Yes (initism ≠ '1')
  - **Ethionamide** is not marked Yes (initeth ≠ '1')
  - **Kanamycin** is not marked Yes (initkan ≠ '1')
  - **Cycloserine** is not marked Yes (initcyc ≠ '1')
  - **Capreomycin** is not marked Yes (initcap ≠ '1')
  - **Para-Amino Salicylic Acid** is not marked Yes (initpas ≠ '1')
  - **Amikacin** is not marked Yes (initam ≠ '1')
  - **Rifabutine** is not marked Yes (initrib ≠ '1')
  - **Ciprofloxacin** is not marked Yes (initcip ≠ '1')
  - **Ofloxacin** is not marked Yes (initofl ≠ '1')
  - **Other** is not marked Yes (initoth ≠ '1')

#### 4 - INH and RIF

*Overview* The record is assigned an **INH and RIF** Initial Drug Regimen value (`initdrc = '4'`) if **Isoniazid** and **Rifampin** are marked Yes and no other drugs are marked Yes.

The record is assigned a **INH and RIF** Initial Drug Regimen value (`initdrc = '4'`) if the following condition is met:

- **Isoniazid** is marked Yes (`initinh = '1'`)
- **Rifampin** is marked Yes (`initrif = '1'`)

- AND -

- All of the following statements are true:
  - **Pyrazinamide** is not marked Yes (`initpza ≠ '1'`)
  - **Ethambutol** is not marked Yes (`initemb ≠ '1'`)
  - **Streptomycin** is not marked Yes (`initism ≠ '1'`)
  - **Ethionamide** is not marked Yes (`initeth ≠ '1'`)
  - **Kanamycin** is not marked Yes (`initkan ≠ '1'`)
  - **Cycloserine** is not marked Yes (`initcyc ≠ '1'`)
  - **Capreomycin** is not marked Yes (`initcap ≠ '1'`)
  - **Para-Amino Salicylic Acid** is not marked Yes (`initpas ≠ '1'`)
  - **Amikacin** is not marked Yes (`initam ≠ '1'`)
  - **Rifabutine** is not marked Yes (`initrib ≠ '1'`)
  - **Ciprofloxacin** is not marked Yes (`initcip ≠ '1'`)
  - **Ofloxacin** is not marked Yes (`initofl ≠ '1'`)
  - **Other** is not marked Yes (`initoth ≠ '1'`)



## 5 - Any Other Multiple Drug Combination

**Overview** The record is assigned an *Any Other Multiple Drug Combination* Initial Drug Regimen value (`initdrc = '5'`) if two or more drugs are marked Yes in any combination that does not exactly match the combinations used for the following Initial Drug Regimen values:

- **INH, RIF, PZA and EMB or SM**
- **INH, RIF and PZA**
- **INH and RIF**

The record is assigned an *Any Other Multiple Drug Combination* Initial Drug Regimen value (`initdrc = '5'`) if the following condition is met:

- Any combination of two or more drugs are marked Yes that are not exactly one of the following combinations:
  - **INH, RIF, PZA and EMB or SM** The following drugs and only the following drugs are marked Yes:
    - **Isoniazid** (`initinh = '1'`)
    - **Rifampin** (`initrif = '1'`)
    - **Pyrazinamide** (`initpza = '1'`)
    - **Ethambutol** (`initemb = '1'`)
    - or-
    - **Isoniazid** (`initinh = '1'`)
    - **Rifampin** (`initrif = '1'`)
    - **Pyrazinamide** (`initpza = '1'`)
    - **Streptomycin** (`initism = '1'`)
  - **INH, RIF and PZA** The following drugs and only the following drugs are marked Yes:
    - **Isoniazid** (`initinh = '1'`)
    - **Rifampin** (`initrif = '1'`)
    - **Pyrazinamide** (`initpza = '1'`)
  - **INH and RIF** The following drugs and only the following drugs are marked Yes:
    - **Isoniazid** (`initinh = '1'`)
    - **Rifampin** (`initrif = '1'`)

## 9 - Unknown

*Overview* The record is assigned an **Unknown** Initial Drug Regimen value (`initdrc = '9'`) if all the drugs are either marked **Unknown** or are Missing.

The record is assigned an **Unknown** Initial Drug Regimen value (`initdrc = '9'`) if the following condition is met:

- All of the following statements are true:
  - **Isoniazid** is marked either Unknown (`initinh = '9'`) or is Missing (`initinh = null`)
  - **Rifampin** is marked either Unknown (`initrif = '9'`) or is Missing (`initrif = null`)
  - **Pyrazinamide** is marked either Unknown (`initpza = '9'`) or is Missing (`initpza = null`)
  - **Ethambutol** is marked either Unknown (`itemb = '9'`) or is Missing (`itemb = null`)
  - **Streptomycin** is marked either Unknown (`initism = '9'`) or is Missing (`initism = null`)
  - **Ethionamide** is marked either Unknown (`initeth = '9'`) or is Missing (`initeth = null`)
  - **Kanamycin** is marked either Unknown (`initkan = '9'`) or is Missing (`initkan = null`)
  - **Cycloserine** is marked either Unknown (`initcyc = '9'`) or is Missing (`initcyc = null`)
  - **Capreomycin** is marked either Unknown (`initcap = '9'`) or is Missing (`initcap = null`)
  - **Para-Amino Salicylic Acid** is marked either Unknown (`initpas = '9'`) or is Missing (`initpas = null`)
  - **Amikacin** is marked either Unknown (`initam = '9'`) or is Missing (`initam = null`)
  - **Rifabutin** is marked either Unknown (`initrib = '9'`) or is Missing (`initrib = null`)
  - **Ciprofloxacin** is marked either Unknown (`initcip = '9'`) or is Missing (`initcip = null`)
  - **Ofloxacin** is marked either Unknown (`initofl = '9'`) or is Missing (`initofl = null`)
  - **Other** is marked either Unknown (`initoth = '9'`) or is Missing (`initoth = null`)

## Occupation

**Note:** This is not a TIMS variable stored in the databases. However, it is a part of the TIMS Surveillance Demographics report.

### Health Care Worker

*Overview* The record is assigned a **Health Care Worker** Occupation if **Health Care Worker** and only **Health Care Worker** is selected.

The record is assigned a **Health Care Worker** Occupation if the following condition is met:

- **Health Care Worker** is selected (`occhcw = '1'`)

- AND -

- All of the following statements are true:
  - **Correctional Employee** is not selected (`occcorr = null`)
  - **Migratory Agricultural Worker** is not selected (`occmig = null`)
  - **Other Occupation** is not selected (`occother = null`)
  - **Not Employed within Past 24 Months** is not selected (`occnnot = null`)
  - **Unknown** is not selected (`occunk = null`)

### Correctional Employee

*Overview* The record is assigned a **Correctional Employee** Occupation if **Correctional Employee** and only **Correctional Employee** is selected.

The record is assigned a **Correctional Employee** Occupation if the following condition is met:

- **Correctional Employee** is selected (`occcorr = '1'`)

- AND -

- All of the following statements are true:
  - **Health Care Worker** is not selected (`occhcw = null`)
  - **Migratory Agricultural Worker** is not selected (`occmig = null`)
  - **Other Occupation** is not selected (`occother = null`)
  - **Not Employed within Past 24 Months** is not selected (`occnnot = null`)
  - **Unknown** is not selected (`occunk = null`)

## Migratory Agricultural Worker

*Overview* The record is assigned a ***Migratory Agricultural Worker*** Occupation if **Migratory Agricultural Worker** and only **Migratory Agricultural Worker** is selected.

The record is assigned a ***Migratory Agricultural Worker*** Occupation value if the following condition is met:

- **Migratory Agricultural Worker** is selected (`occmig = '1'`)

- AND -

- All of the following statements are true:
  - **Health Care Worker** is not selected (`occhcw = null`)
  - **Correctional Employee** is not selected (`occcorr = null`)
  - **Other Occupation** is not selected (`occother = null`)
  - **Not Employed within Past 24 Months** is not selected (`occnnot = null`)
  - **Unknown** is not selected (`occunk = null`)

## Other Occupation

*Overview* The record is assigned an ***Other Occupation*** Occupation if **Other Occupation** and only **Other Occupation** is selected.

The record is assigned an ***Other Occupation*** Occupation value if the following condition is met:

- **Other Occupation** is selected (`occother = '1'`)

- AND -

- All of the following statements are true:
  - **Health Care Worker** is not selected (`occhcw = null`)
  - **Correctional Employee** is not selected (`occcorr = null`)
  - **Migratory Agricultural Worker** is not selected (`occmig = null`)
  - **Not Employed within Past 24 Months** is not selected (`occnnot = null`)
  - **Unknown** is not selected (`occunk = null`)

## Multiple Occupations

*Overview* The record is assigned a ***Multiple Occupations*** Occupation if any combination of two or more of the following occupations are selected.

The record is assigned a ***Multiple Occupations*** Occupation value if the following condition is met:

- Any combination of two or more of the following occupations are selected:
  - **Health Care Worker** (`occhcw = '1'`)
  - **Correctional Employee** (`occcorr = '1'`)
  - **Migratory Agricultural Worker** (`occmig = '1'`)
  - **Other Occupation** (`occother = '1'`)

## Not Employed

*Overview* The record is assigned a ***Not Employed within Past 24 Months*** Occupation value if **Not Employed within Past 24 Months** is selected.

The record is assigned a ***Not Employed within Past 24 Months*** Occupation value if the following condition is met:

- **Not Employed within Past 24 Months** is selected (`occnnot = '1'`)

## Unknown

*Overview* The record is assigned an ***Unknown*** Occupation value if **Unknown** is selected.

The record is assigned an ***Unknown*** Occupation value if the following condition is met:

- **Unknown** is selected (`occunk = '1'`)

## Missing

*Overview* The record is assigned a ***Missing*** Occupation value if none of the Occupations has been selected.

The record is assigned a ***Missing*** Occupation value if the following condition is met:

- All of the following statements are true:
  - **Health Care Worker** is not selected (`occhcw = null`)
  - **Correctional Employee** is not selected (`occcorr = null`)
  - **Migratory Agricultural Worker** is not selected (`occmig = null`)
  - **Other Occupation** is not selected (`occother = null`)
  - **Not Employed within Past 24 Months** is not selected (`occnnot = null`)
  - **Unknown** is not selected (`occunk = null`)

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